

REMARKS/ARGUMENTS

1.) Claim Amendments

Claims 1-22 are pending in the application. The Applicants have amended claims 1-3, 10, 11, and 19. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

2.) Claim Rejections – 35 U.S.C. § 102

In paragraph 2 of the Office Action, the Examiner rejected claims 1, 4 and 6, 9, 11, 13, 15, 19 and 21 under 35 U.S.C. § 102(e) as being anticipated by Mitchell, et al. (US 6,574,595). The Applicants disagree in part, and have amended the claims in part to better distinguish the claimed invention from Mitchell. The Examiner's consideration of the amended claims is respectfully requested.

Mitchell discloses a method and apparatus for recognition-based barge-in detection. Mitchell discloses an automatic speech recognition (ASR) system that models the user's acoustic speech using continuous density hidden Markov models. (Col. 3, lines 28-29). By recognizing the best matching phonemes or sub-words, Mitchell eliminates possibilities that are not the best matching at each stage of speech recognition. (Col. 3, lines 23-27). Mitchell also discloses the use of models for leading filler and garbage. (Col. 2, lines 46-49).

However, Mitchell completely ignores the impact of the echo from the outgoing voice prompt. There is no teaching or suggestion of any method for distinguishing the user's barge-in speech commands from the voice prompt echo, as recited in each of the Applicants' independent claims.

In paragraph 4 of the Office Action, the Examiner rejected claim 10 under 35 U.S.C. § 102(b) as being anticipated by Bridges (US 5,978,763). The Applicant notes, however, that Bridges's solution to the voice prompt echo is to establish a threshold for the recognition of voice commands based on the echo return loss. Voice commands must exceed the threshold to be recognized and acted upon. Bridges notes the disadvantage that some commands may not be recognized, but accepts this

disadvantage because it is preferable to being too sensitive and stopping the voice prompt when the user did not barge in. (Col. 3, lines 8-24).

The Applicants' claimed invention differs from Mitchell and Bridges because it mathematically models the words of both the outgoing voice prompt and a set of command words that may be spoken by the user to barge in. The invention then determines whether the input signal best matches the words of the voice prompt or one of the command words. If the input signal best matches the words of the voice prompt, the input signal is ignored. If the input signal best matches one of the command words, the barge-in is accepted.

Claims 1-3, 10, 11, and 19 have been amended to clarify that the words of the outgoing voice prompt are modeled, not just the amplitude or echo return loss. Basis for the amendment is found in the originally filed specification on page 6, paragraph [0018] ("The recognizer then builds the prompt model by concatenating the appropriate phonetic units, which are selected utilizing the orthographic text of the prompt.")

There is no teaching or suggestion of the claimed system and method for distinguishing the user's barge-in speech commands from the voice prompt echo in the manner recited in the Applicants' independent claims. Therefore, the withdrawal of the § 102 rejections and the allowance of claims 1-22 is respectfully requested.

3.) Claim Rejections – 35 U.S.C. § 103(a)

In paragraph 6 of the Office Action, the Examiner rejected claims 2-3 under 35 U.S.C. § 103(a) as being unpatentable over Mitchell (US 6,574,595) in view of Backfried, et al. (US 6,801,893). The Applicants respectfully disagree. The Examiner confuses Mitchell's analysis of the user's barge-in speech with the Applicant's analysis of the system prompt. Mitchell does not teach or suggest modeling and analyzing the words of the system prompt.

Furthermore, the Examiner states that Backfried discloses the steps of providing the speech recognizer with an orthographic text of the prompt prior to playing the prompt, and building the prompt model by the speech recognizer. The Applicant respectfully disagrees. Backfried discloses a computerized method of adding a new word to a vocabulary of a speech system, but there is no teaching or suggestion of

modeling and analyzing the words of a system voice prompt. Thus, the combination of Mitchell and Backfried does not teach or suggest all of the limitations of base claim 1, and does not establish a *prima facie* case of obviousness. Therefore, the allowance of dependent claims 2 and 3 is respectfully requested.

In paragraph 7 of the Office Action, the Examiner rejected claims 5, 14, and 22 under 35 U.S.C. § 103(a) as being unpatentable over Mitchell (US 6,574,595) in view of Hardwick (US 2004/0093206). The Applicants respectfully disagree.

The Examiner states that Mitchell discloses the claimed invention except for the step of generating an acoustic model of the system voice prompt by generating the acoustic prompt model at an attenuation level of approximately 20 dB relative to the system voice prompt. The Examiner contends this step is shown by Hardwick. The Applicants respectfully disagree.

There is nothing in Hardwick suggesting that the disclosed 20 dB attenuation has anything to do with the way that an acoustic model of a system voice prompt is generated. Thus, the combination of Mitchell and Hardwick does not teach or suggest all of the limitations of the independent claims, and does not establish a *prima facie* case of obviousness. Therefore, the allowance of dependent claims 5, 14, and 22 is respectfully requested.

In paragraph 8 of the Office Action, the Examiner rejected claims 7-8 and 16-17 under 35 U.S.C. § 103(a) as being unpatentable over Mitchell (US 6,574,595) in view of Bridges. The Applicants respectfully disagree. As noted above, the Applicants' claimed invention differs from Mitchell and Bridges because it mathematically models the words of both the outgoing voice prompt and a set of command words that may be spoken by the user to barge in. The invention then determines whether the input signal best matches the words of the voice prompt or one of the command words. If the input signal best matches the words of the voice prompt, the input signal is ignored. If the input signal best matches one of the command words, the barge-in is accepted. Neither Mitchell nor Bridges teach or suggest these claimed limitations. Thus a *prima facie* case of obviousness has not been established. Therefore, the allowance of dependent claims 7-8 and 16-17 is respectfully requested.

In paragraph 9 of the Office Action, the Examiner rejected claims 12 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Mitchell (US 6,574,595) in view of Helbing (US 2005/0038659). The Examiner states that Helbing discloses a recognizer comprising means for generating the acoustic prompt model from a known text (col. 1, paragraph [0004]) in order to be of service to various users. The Applicants respectfully disagree.

Although Helbing mentions the well known fact that voice prompts are derived from a known text, Helbing does not teach or suggest generating a model of the system voice prompt. This step is not taught or suggested by Mitchell or Helbing. Thus a *prima facie* case of obviousness has not been established. Therefore, the allowance of dependent claims 12 and 20 is respectfully requested.

4.) Prior Art Not Relied Upon

In paragraph 10 of the Office Action, the Examiner stated that the prior art made of record and not relied upon (Chengalvarayan et al.) is considered pertinent to the Applicants' disclosure. However, Applicants' reading of Chengalvarayan has not revealed any teaching or suggestion of a speech recognizer or method of suppressing speech recognition errors as claimed by the Applicants.

5.) Conclusion

In view of the foregoing remarks, the Applicants believe all of the claims currently pending in the Application to be in a condition for allowance. The Applicants, therefore, respectfully request that the Examiner withdraw all rejections and issue a Notice of Allowance for claims 1-22.

The Applicants request a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,



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